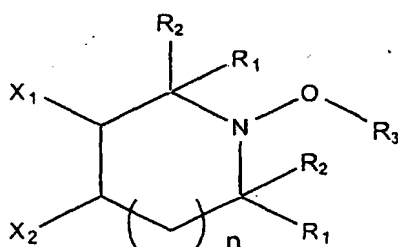


CLAIMS

1. A process for the preparation of block copolymers by means of radicalic polymerization which comprises:

a) polymerizing a vinylaromatic monomer at a temperature  
 5 higher than or equal to 120°C in the presence of a radicalic initiating system comprising a compound having general formula (I):

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wherein R<sub>1</sub> and R<sub>2</sub>, the same or different, represent a methyl or ethyl radical, X<sub>1</sub> represents a hydrogen atom, X<sub>2</sub> represents a hydrogen atom or a hydroxyl or  
 X<sub>1</sub> and X<sub>2</sub>, the same or different, represent a C<sub>1</sub>-C<sub>4</sub> (iso)alkyl radical, or, they jointly form an aromatic ring, n is equal to zero or 1 and R<sub>3</sub> represents a  
 20 radical selected from one of the following groups:

-C(CH<sub>3</sub>)<sub>2</sub>-CN;

-C(CH<sub>3</sub>)<sub>2</sub>-Ph;

-CHCH<sub>3</sub>Ph;

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or R<sub>3</sub> is absent, as in that position there is an uncoupled electron;

until a conversion of the monomer ranging from 5 to 99.9% is obtained;

- b) feeding to the polymerization mixture of step (a), after obtaining the desired conversion, a monomer deriving from (meth)acrylic acid in such a quantity that, at the end of the polymerization, the total weight of the block copolymer Mw is lower than 1,000,000, operating at the same temperature and in the presence of the same initiating system;
- 10 c) recovering, at the end of the polymerization, the block copolymer thus obtained.
2. The process according to claim 1, wherein the R<sub>3</sub> group is -C(CH<sub>3</sub>)<sub>2</sub>-CN.
3. The process according to claim 1, wherein the R<sub>3</sub> group is -C(CH<sub>3</sub>)<sub>2</sub>-Ph.
- 15 4. The process according to claim 1, wherein the R<sub>3</sub> group is -CHCH<sub>3</sub>Ph.
5. The process according to claim 1, wherein the R<sub>3</sub> group is absent.
- 20 6. The process according to any of the previous claims, wherein the polymerization of both step (a) and step (b) is carried out at a temperature ranging from 120 to 150°C.
7. The process according to any of the previous claims, wherein the initiator having general formula (I) is present in concentrations ranging from 0.01 to 2% in moles with re-
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spect to the total moles of the monomers fed.

8. The process according to any of the previous claims, wherein the initiator having general formula (I) is used in a mixture with radical generator compounds (G) selected  
5 from peroxides, peresters, percarbonates, azobisdialkyldinitriles, with molar ratios I/G lower than 4.

9. The process according to claim 8, wherein the initiator having general formula (I) is used with free radical generators (G) selected from dibenzoyl peroxide, dicumyl  
10 peroxide, N,N'-azobis-(diisobutyronitrile) with molar ratios I/G ranging from 1 to 3.

10. The process according to any of the previous claims, wherein the polymerization of both steps (a) and (b) is carried out batchwise, in continuous or semi-continuous at  
15 a temperature higher than 120°C and at a pressure which is such as to maintain the monomers in liquid phase.

11. The process according to any of the previous claims, wherein in the radicalic initiating system having general formula (I), X<sub>1</sub> and X<sub>2</sub> jointly form an aromatic ring, and n  
20 is equal to zero.

12. The process according to claim 11, wherein the initiator having general formula (I) is selected from:

1,1,3,3-tetraethyl-2-(2-cyanoprop-2-yl)-2,3-dihydro-1H-isoindole;

25 1,1,3,3-tetraethyl-2-(2-phenylprop-2-yl)-2,3-dihydro-1H-

isoindole;

1,1,3,3-tetraethyl-2-(2-phenylethyl)-2,3-dihydro-1H-

isoindole;

1,1,3,3-tetramethyl-2-(2-cyanoprop-2-yl)-2,3-dihydro-1H-

5 isoindole;

1,1,3,3-tetramethyl-2-(2-phenylprop-2-yl)-2,3-dihydro-1H-

isoindole;

1,1,3,3-tetramethyl-2-(2-phenylethyl)-2,3-dihydro-1H-

isoindole.

- 10 13. Block copolymers based on vinylaromatic monomers and monomers deriving from (meth)acrylic acid obtained with the process according to any of the previous claims.

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